

In the Specification

On page 15, after the paragraph numbered [0047], please insert the following new paragraph:

[0048] Example implementations. The present invention can comprise, as examples, any of the following:

1. A sample holder comprising a body, of a material that is functionally transparent to at least some wavelengths of visible light, and functionally transparent to at least some wavelengths of infrared light, and that defines:
 - a. A first face, defining a region adapted to support a sample, where the first face is substantially planar in the region;
 - b. A second face, substantially parallel to the first face.
2. A sample holder as in example 1 above, wherein the material is functionally transparent to near-infrared light.
3. A sample holder as in example 1 above, wherein the material is functionally transparent to mid-infrared light.
4. A sample holder as in example 1 above, wherein the region is adapted to support a biological sample.
5. A sample holder as in example 1 above, wherein the region is adapted to support a non-biological sample.
6. A sample holder as in example 1 above, wherein the shape of the body is compatible with contemporary infrared microscopes.
7. A sample holder as in example 1 above, wherein the shape of the body is compatible with contemporary focal plane array systems.
8. A sample holder as in example 1 above, wherein the shape of the body is compatible with contemporary optical microscopes.
9. A sample holder as in example 1 above, wherein the dimensions of the body are compatible with contemporary optical microscopes.
10. A sample holder as in example 1 above, where the body has a length of from 0.25 to 4 inches, a width of from 0.1 to 1.5 inches, and a thickness of from 0.01 to 0.1 inches.
11. A sample holder as in example 10 above, wherein the body has a length of about 3 inches, a width of about 1 inch, and a thickness of about 0.04 inch.
12. A sample holder as in example 10 above, wherein the body has a length of 0.25 inches to 2.5 inch, a width of 0.1 inches to 1 inch, and a thickness of 0.01 to 0.1 inches.
13. A sample holder as in example 1 above, wherein the sample holder index of refraction is amenable to attenuated total internal reflection of infrared light.
14. A sample holder as in example 1 above, wherein the sample holder index of refraction is from 1.3 to 3.5.
15. A sample holder as in example 1 above, wherein the material comprises: Barium Fluoride, Caesium Iodide, Calcium Fluoride, Cubic Zirconium, Diamond, Lithium Fluoride, Magnesium Fluoride, Potassium Bromide, Potassium Chloride, Quartz, Sapphire, Silver Bromide, Silver Chloride, Sodium Chloride, Thallium Bromide, Thallium Bromo-Iodide, Thallium Bromo-Chloride, Zinc Selenide, Zinc Sulfide, Multispectral Zinc Sulfide.
16. A sample holder as in example 1 above, wherein the material separating the first and second faces defines first and second opposing edges, where the first and second opposing edges intersect the first face along substantially parallel lines, and wherein the first and second edges are oriented at first and second angles, respectively, to the first face.
17. A sample holder as in example 16 above, wherein the first and second angles are about 90 degrees.
18. A sample holder as in example 16 above, wherein the first and second angles are substantially equal.
19. A sample holder as in example 16 above, wherein the second edge intersects the second surface at an angle substantially the same as the first angle.
20. A sample holder as in example 16 above, wherein the first angle is in the range from 10 to 90 degrees.
21. A sample holder as in example 16 above, wherein the first angle is about 50 degrees.
22. A sample holder as in example 16 above, wherein the first and second edges are finished to an optically smooth surface.
23. A sample holder as in example 16 above, wherein the first and second edges are treated with at least one of:
 - a. an antireflective coating;

- b. a reflective coating;
- c. a selective spectral transmission coating.
- 24. A sample holder comprising:
 - a. a frame,
 - b. a sample interface mounted with the frame, where the sample interface comprises:
 - i. a material that is functionally transparent to at least some wavelengths of visible light and functionally transparent to at least some wavelengths of infrared light, and that defines
 - ii. a first face, defining a region adapted to support a sample, where the first face is substantially planar in the region;
 - iii. a second face, substantially parallel to the first face.
- 25. A sample holder as in example 24 above, wherein the shape of the frame is compatible with contemporary optical microscopes.
- 26. A sample holder as in example 24 above, wherein the dimensions of the frame are compatible with contemporary optical microscopes.
- 27. A sample holder as in example 24 above, where the frame has a length of from 1 to 4 inches, a width of from 0.5 to 1.5 inches, and a thickness of from 0.01 to 0.1 inches.
- 28. A sample holder as in example 27 above, wherein the frame has a length of about 3 inches, a width of about 1 inch, and a thickness of about 0.04 inch.
- 29. A sample holder as in example 24 above, wherein the sample interface index of refraction is amenable to attenuated total internal reflection of light in the mid-infrared region.
- 30. A sample holder as in example 24 above, wherein the material comprises: Barium Fluoride, Caesium Iodide, Calcium Fluoride, Cubic Zirconium, Diamond, Lithium Fluoride, Magnesium Fluoride, Potassium Bromide, Potassium Chloride, Quartz, Sapphire, Silver Bromide, Silver Chloride, Sodium Chloride, Thallium Bromide, Thallium Bromo-Iodide, Thallium Bromo-Chloride, Zinc Selenide, Zinc Sulfide, Multispectral Zinc Sulfide.
- 31. A sample holder as in example 24 above, wherein the material separating the first and second faces defines first and second opposing edges, where the first and second opposing edges intersect the first surface along substantially parallel lines, and wherein the first and second edges are oriented at first and second angles, respectively, to the first surface.
- 32. A sample holder as in example 31 above, wherein the first and second angles are about 90 degrees.
- 33. A sample holder as in example 32 above, wherein the first and second angles are substantially equal.
- 34. A sample holder as in example 31 above, wherein the second edge intersects the second surface at an angle substantially the same as the first angle.
- 35. A sample holder as in example 31 above, wherein the first angle is in the range from 10 to 90 degrees.
- 36. A sample holder as in example 31 above, wherein the frame defines an opening, wherein the opening is adapted to mount with the sample interface leaving space between the frame and the sample interface adjacent the first and second edges.
- 37. A sample holder as in example 36 above, wherein the space accommodates substantially unobstructed passage of light to the sample interface.
- 38. A sample holder as in example 36 above, wherein the sample interface mounts with the frame using ledges on the frame, clips mounted with the frame and engaging the sample interface, clips mounted with the sample interface and engaging the frame, an interference fit of the frame and the sample holder, an adhesive in contact with the sample holder and the frame, or a combination thereof.
- 39. A sample holder for cancer analysis, comprising a body of a material that is functionally transparent to at least some wavelengths of visible light, and functionally transparent to at least some wavelengths of infrared light, where the body defines:
 - a. A first face, defining a region adapted to support a sample comprising biological material, where the first face is substantially planar in the region;
 - b. A second face, substantially parallel to the first face.
- 40. A cervical cancer screening apparatus, comprising:
 - a. A sample holder, comprising a body of a material that is functionally transparent to at least some wavelengths of visible light, and functionally transparent to at least some wavelengths of infrared light, the body defining:
 - i. A first face, defining a region adapted to support a sample comprising cervical cells, where the first face is substantially planar in the region;

- ii. A second face, substantially parallel to the first face.
- b. Means for directing light to the sample holder;
- c. Means for collecting light after interaction with a sample supported by the sample holder;
- d. Means for analyzing the collected light to determine a characteristic of the sample related to cervical cancer.

Please replace paragraph [0043] with the following, with changes from the original highlighted:

[0043] Figure 12 is a schematic representation of an example apparatus suitable for some applications of the present invention. A light source 9 supplies light to a collimating mirror 7. The resulting collimated light beam travels to a beamsplitter 10, which is the beamsplitter of a Michelson interferometer. The beam is split into two beams which travel to two end mirrors of the interferometer 12a, 12'b. Mirror 12a is the fixed mirror and mirror 12'b is the moving mirror of the interferometer. The beams then return to beamsplitter 10 where they recombine and exit towards mirror 11. Mirror 11 focuses the beam onto aperture 17, the size of which is adjustable. The beam then travels to focusing mirror 15 which re-images aperture 17 onto the sample holder 23. The sample holder 23 can be mounted in an orientation that allows the beam to be incident on an edge of the sample holder as described previously. The beam passes through the edge and is totally internally reflected within the sample holder 23. After the beam passes through the sample holder 23 and exits the opposing edge, it continues to mirror 28. Mirror 28 refocuses the beam onto a detector 29 or array of detectors. The imaging of the sample holder 23 onto a detector 29 or array of detectors can define different regions of the sample-holding surface as a consequence of the direction and divergence of the beam relative to the sample holder and of the beam being totally internally reflected within the sample holder 23. Plan view 30 is a representation of the sampling-holding surface of sample holder 23, whereby it is conceptually separated into different regions or portions 31. The signal at the detector can be processed by a computer 50, and the resultant spectrum can be stored on the hard disk and displayed on the monitor 51. A spectrum can be stored for each of the regions 31 on the sample holder to be mapped.